NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION

LAKE TROPHIC DATA

MORPHOMETRIC:

LAKE Mill Pond, North	LAKE AREA (HA) 23.84
TOWN Portsmouth	MAXIMUM DEPTH (M)
COUNTY Rockingham	MEAN DEPTH (M)
RIVER BASIN Piscataqua	VOLUME (M^3)
LATITUDE 43°05'N	MUD SURFACE AREA (HA)
LONGITUDE 70°46'W	RELATIVE DEPTH
ELEVATION (FT) 10	SHORE CONFIGURATION
SHORE LENGTH (M)	AREAL WATER LOAD (M/YR)
WATERSHED AREA (HA) 583.9	FLUSHING RATE (YR^{-1})
% WATERSHED PONDED <0.1	PHOSPHORUS RETENTION COEFF.

BIOLOGICAL: DATE		
DOM. PHYTOPLANKTON (% total) 1		
2		
NUMBER OF ALGAL GENERA		
TOTAL ALGAL COUNTS (cells/ml)		
CHLOROPHYLL a (µg/L)		
DOM. ZOOPLANKTON (% total) 1		
2		
ROTIFERS/LITER		
MICROCRUSTACEA/LITER		
TOTAL ZOOPLANK. CNTS (cells/L)		
VASCULAR PLANT ABUNDANCE		
DOMINANT VASCULAR PLANTS 1		
2		
3		
SECCHI DISK TRANSPARENCY (M)		
BOTTOM DISS. OXYGEN (mg/L)		
SEDIMENT: % ORGANIC MATTER		

LAKE TYPE: Tidal pond.

SUMMER THERMAL STRATIFICATION: YES ____ NO ____ WEAK ____

IF YES, VOLUME OF HYPOLIMNION _____ (m^3) THERMOCLINE DEPTH _____ (m)

CHEMICAL: (mg/L unless indicated otherwise) LAKE: Mill Pond, North

	WINTER		SUMMER		
DATE DATE					
DEPTH (M)					
pH (UNITS)					
ALKALINITY					
TOTAL KJELDAHL NITROGEN					
NITRITE+NITRATE NITROGEN					
DISSOLVED ORTHOPHOSPHATE					
TOTAL PHOSPHORUS					
SPEC. CONDUCT. (μMhos/cm)					
APPARENT COLOR (UNITS)					
TURBIDITY (NTU)					
MAGNESIUM					
CALCIUM					
SODIUM					
POTASSIUM					
CHLORIDE					
TN : TP					
INORG-N : INORG-P					
[Mg+Ca] : [Na+K]					
CALCITE SATURATION INDEX					

* = NOT DEFENSIBLE NR = NO RESULT

TROPHIC CLASSIFICATION: _____

	D.O.	S.D.	PLANT ABUND.	CHL a	TOTAL PTS.	TROPHIC CLASS.
CLASSIFICATION POINTS:						N/C

COMMENTS:

1. This is a tidal pond that was reduced to a small pool at low tide; it was not surveyed, and no trophic classification was assigned.
2. In July of 1981, a proposal to construct tide gates to maintain a permanent pond was on file at the Wetlands Board; previous gates were abandoned in the mid-1960's; these gates would maintain a water level of about 7.1 feet elevation; no gate was in operation at the time of our visits in 1982.

NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION

LAKE TROPHIC DATA

MORPHOMETRIC:

LAKE	Mill Pond, South	LAKE AREA (HA)	7.12
TOWN	Portsmouth	MAXIMUM DEPTH (M)	1.8
COUNTY	Rockingham	MEAN DEPTH (M)	0.7
RIVER BASIN	Piscataqua	VOLUME (M^3)	50,000
LATITUDE	43°04'N	MUD SURFACE AREA (HA)	7.12
LONGITUDE	70°45'W	RELATIVE DEPTH	0.6
ELEVATION (FT)	40	SHORE CONFIGURATION	1.48
SHORE LENGTH (M)	1400	AREAL WATER LOAD (M/YR)	3.51
WATERSHED AREA (HA)	55.3	FLUSHING RATE (YR^{-1})	4.7
% WATERSHED PONDED	0	PHOSPHORUS RETENTION COEFF.	0.72

BIOLOGICAL: DATE	10 MAR 1982	24 AUG 1982
DOM. PHYTOPLANKTON (% total) 1	Sparse - no dominant	Gyrosigma (45%)
2		Oscillatoria (25%)
NUMBER OF ALGAL GENERA		8
TOTAL ALGAL COUNTS (cells/ml)		
CHLOROPHYLL a (µg/L)		8.55
DOM. ZOOPLANKTON (% total) 1	Sparse - no dominant	Nauplius larvae (80%)
2		Polychaete larvae (15%)
ROTIFERS/LITER		13
MICROCRUSTACEA/LITER		216
TOTAL ZOOPLANK. CNTS (cells/L)		264
VASCULAR PLANT ABUNDANCE		Common
DOMINANT VASCULAR PLANTS 1		Gramineae Family
2		
3		
SECCHI DISK TRANSPARENCY (M)		1.8 V.O.B.
BOTTOM DISS. OXYGEN (mg/L)	11.2	4.9
SEDIMENT: % ORGANIC MATTER	9.4	

LAKE TYPE: A natural tidal pond with a retainer dam.

SUMMER THERMAL STRATIFICATION: YES ____ NO X WEAK ____

IF YES, VOLUME OF HYPOLIMNION _____ (m^3) THERMOCLINE DEPTH _____ (m)

CHEMICAL: (mg/L unless indicated otherwise)	LAKE: Mill Pond, South				
	WINTER		SUMMER		
DATE DATE	10 MAR 1982		24 AUG 1982		
DEPTH (M)	0.5		1.0		
pH (UNITS)	7.9		7.7		
ALKALINITY	83.8		114		
TOTAL KJELDAHL NITROGEN	0.32		* 1.92		
NITRITE+NITRATE NITROGEN	0.13		0.06		
DISSOLVED ORTHOPHOSPHATE	0.007		0.035		
TOTAL PHOSPHORUS	0.054		0.090		
SPEC. CONDUCT. (μMhos/cm)			8460.4		
APPARENT COLOR (UNITS)			35		
TURBIDITY (NTU)			4.0		
MAGNESIUM			1150		
CALCIUM			500		
SODIUM			9300		
POTASSIUM			400		
CHLORIDE			> 500		
TN : TP	8		22		
INORG-N : INORG-P	18		2		
[Mg+Ca] : [Na+K]			0.17		
CALCITE SATURATION INDEX			-1.2		

* = NOT DEFENSIBLE NR = NO RESULT

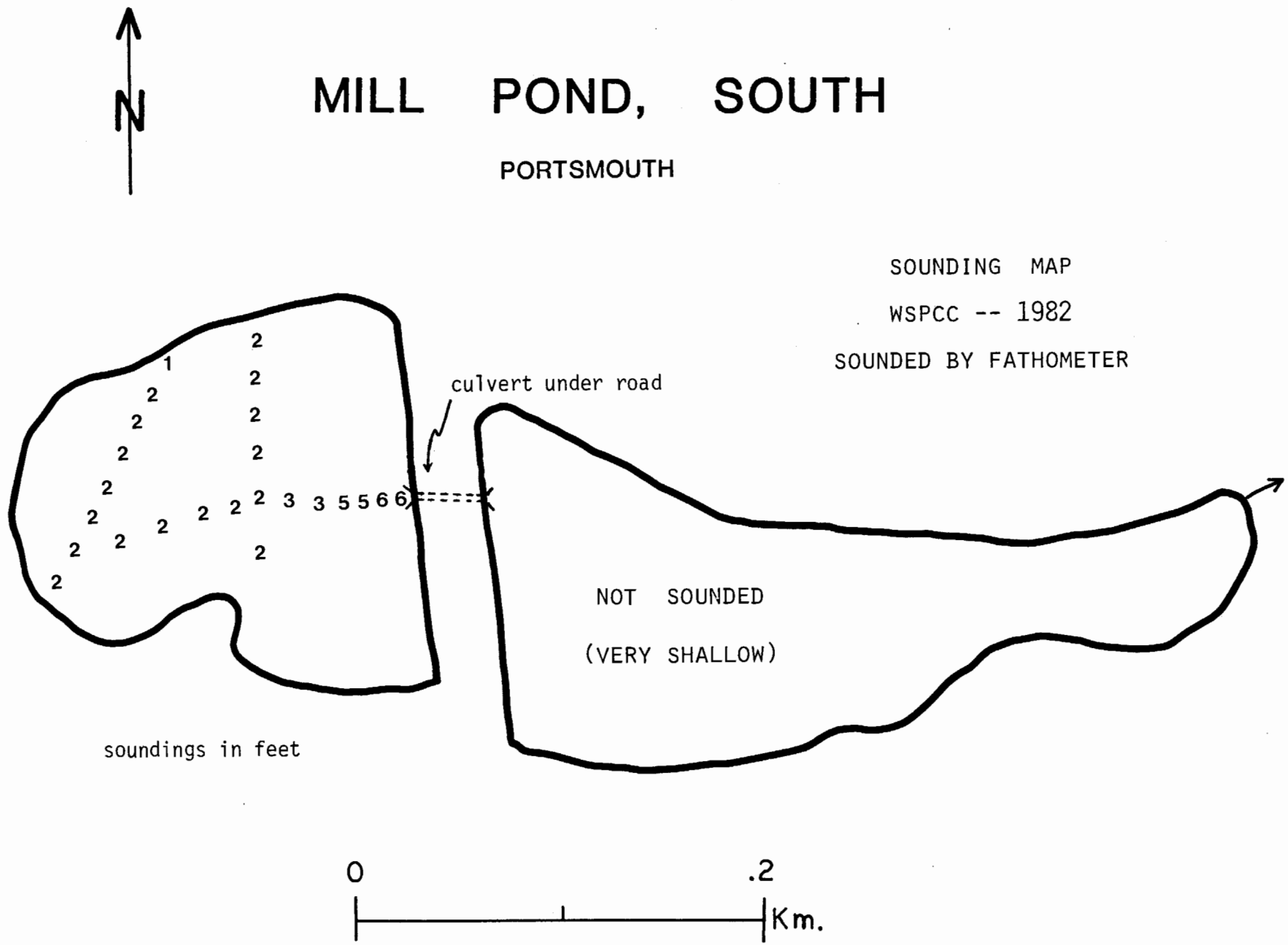
TROPHIC CLASSIFICATION: 1982

	D.O.	S.D.	PLANT ABUND.	CHL a	TOTAL PTS.	TROPHIC CLASS.
CLASSIFICATION POINTS:	-	2	2	1	5	MESO.

COMMENTS:

1. This pond is a backwater of the Piscataqua River, and receives sea-water at high tide. Its water level is maintained during the tidal cycle by a retainer dam.

2. The pond was split into two sections by a road, the sections connected via a culvert. Only the upper (western) section was accessible by boat and could be surveyed.


N
MILL POND, SOUTH
PORTSMOUTH
SOUNDING MAP
WSPCC -- 1982
SOUNDED BY FATHOMETER
culvert under road
NOT SOUNDED
(VERY SHALLOW)
soundings in feet
0
.2
Km.

FIELD DATA SHEET

WATER BODY Mill Pond, South TOWN Portsmouth BY WSPCC

DATE COLLECTED 24 AUGUST 1982 WEATHER Partly cloudy

STATION	DEPTH (M)	TEMP. (°C)	*DISSOLVED OXYGEN	OXYGEN: % SATURATION			
Deep Spot	0.0	20.7	5.1	57%			
	0.5	20.7	5.0				
	1.0	20.7	4.9				
	1.5	20.7	4.9	55%			

SECCHI DISK (M) 1.8 V.O.B.

BOTTOM DEPTH (M) 1.8

TIME 1230

* Dissolved oxygen values in mg/L

COMMENTS:

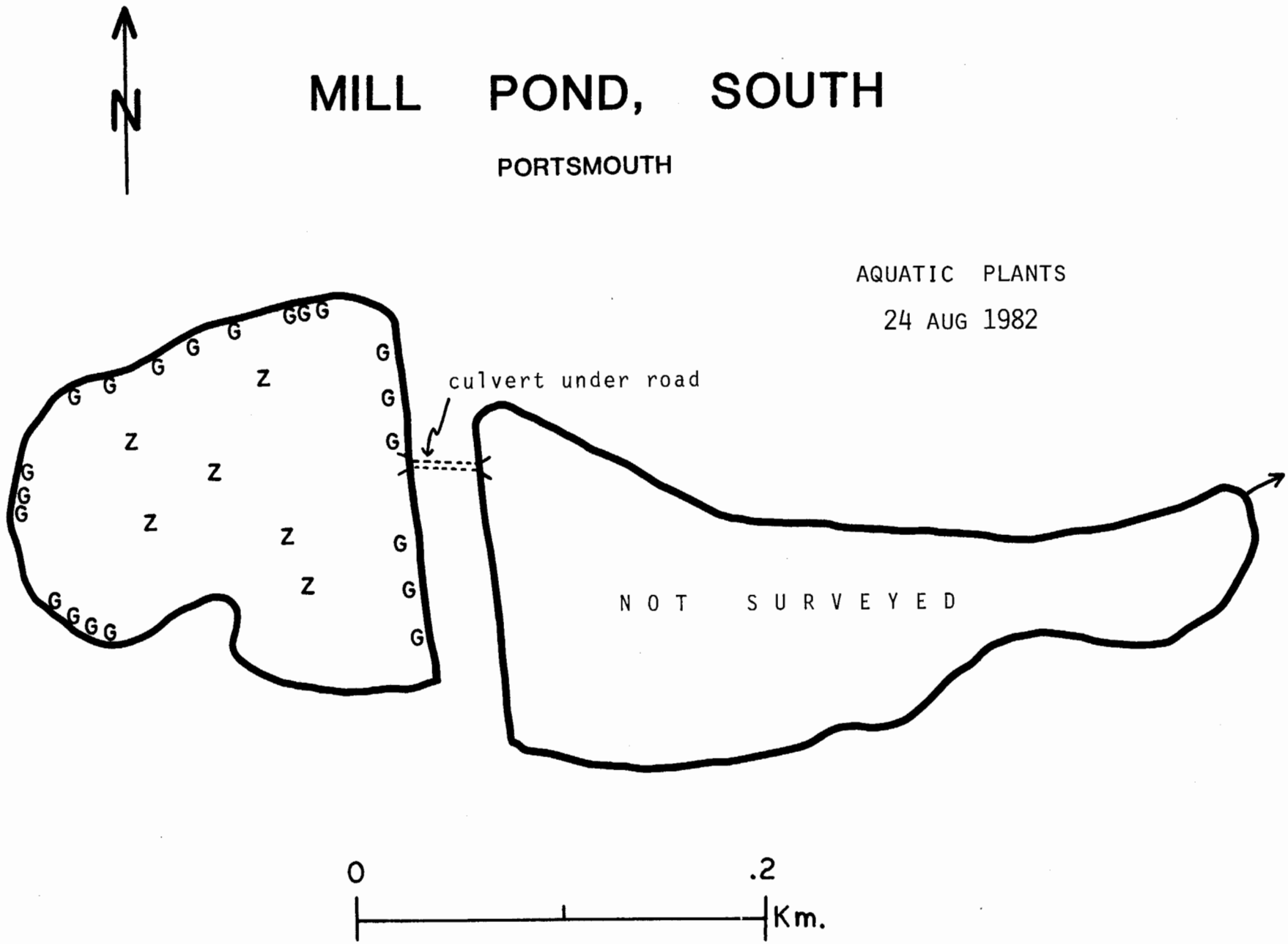
1. This pond is flooded with seawater at high tide; the salinity was 26%.
2. The dissolved oxygen values are suspect.
3. The Secchi disk was visible on bottom (V.O.B.)

MILL POND, SOUTH

PORTSMOUTH

AQUATIC PLANTS

24 AUG 1982



AQUATIC PLANT SURVEY

LAKE Mill Pond, South TOWN Portsmouth DATE 24 AUG 1982 BY WSPCC

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
G	Gramineae	Grass Family	Common
Z		unidentified marine plant	Scattered

OVERALL ABUNDANCE Common

GENERAL OBSERVATIONS:

1. Grasses were common along the shore, and an unidentified plant was scattered over the bottom. This pond receives seawater at high tide but the water level does not fluctuate greatly.